

ABSTRACT

Label distribution protocol (LDP) signaled label-switched paths (LSPs) are supported without requiring information about remote autonomous systems (ASs) to be injected into the local interior gateway protocol (IGP). This may be done by (i) decoupling a forwarding equivalency class (FEC) element from the routing information, and (ii) specifying a next hop on which the FEC relies. An LDP messaging structure (e.g., an LDP type-length-value (TLV)) that includes a label, FEC information (e.g., a host address or prefix of an egress LSR of the LSP) and a next hop (e.g., a host address or prefix of a border node, such as an AS border router (ASBR)) may be provided. This messaging structure may be included in one or more of (a) label mapping messages, (b) label withdraw messages, and (c) label release messages. If an LDP message including the expanded LDP messaging structure is received at a node, the node may determine whether or not to propagate the LSP using the next hop information, rather than the FEC information. If, on the other hand, the LDP message includes a normal LDP messaging structure, the node may determine whether or not to propagate the LSP as usual.